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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,759	12/21/2004	Takekuni Nakama	58777.000017	2877

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EXAMINER	
HISSONG, BRUCE D	
ART UNIT	**PAPER NUMBER**
1646	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,759	NAKAMA, TAKEKUNI	
	Examiner	Art Unit	
	Bruce D. Hissong, Ph.D.	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9 and 12-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9 and 12-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/30/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Formal Matters

1. The Applicant's response to the office action mailed on 5/30/2006, including arguments/remarks and amendments to the claims, was received on 11/30/2006 and has been entered into the record.

2. The Applicant's supplemental response was received on 1/3/2007 and has been entered into the record.

3. The Applicant has cancelled claims 1-8 and 10-11, and added new claims 12-17. Therefore, claims 9 and 12-17 are currently pending and are the subject of this office action.

Information Disclosure Statement

The information disclosure statement received on 11/30/2006 has been fully considered.

Drawings

Objection to the drawings, as set forth on form PTO-948 mailed on 5/30/2006, is withdrawn in response to Applicant's amendments to the drawings.

Claim Rejections - 35 USC § 112, first paragraph – enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Rejection of claim 9 under 35 USC § 112, first paragraph, regarding lack of enablement for a composition for treating any type of pemphigoid other than bullous pemphigoid, wherein said composition comprises any interferon (IFN)-γ other than human IFN-γ, as set forth on pages 2-4 of the office action mailed on 5/30/2006, is *withdrawn* in response to Applicant's

amendments to the claims to recite a composition of human IFN-γ for treating bullous pemphigoid.

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9 and 12-17 are *rejected* under 35 USC § 112, second paragraph, as being indefinite regarding the acronym JRU, as originally applied to claims 2 and 7 on page 6 of the prior office action mailed on 5/30/2006. In the response received on 11/30/2006, the Applicant notes that JRU stands for "Japanese Reference Unit", which is a term commonly used for IFN-γ in Japan. The Applicant also notes that 1 JRU corresponds to 1.5 IU (International Units), and submitted JSICR News Letter, No. 1, March 18, 1996 as evidence. However, while these statements and evidence more clearly defines the term JRU, the term is still not defined upon the first use in the presently amended claims, and therefore the original rejection pertaining to claims 2 and 7 is applied to amended/new claims 9 and 12-17. Claims 16-17 are rejected for depending from a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Rejections withdrawn

1. Rejection of claim 9 under 35 USC § 102(b) as being anticipated by von Eichborn *et al* (US 5,145,677), as set forth on pages 7-8 of the office action mailed on 5/30/2006, is

withdrawn in response to Applicant's amendments to the claim to specifically recite a therapeutic composition comprising IFN-γ at a dose range of 2,000,000 – 4,000,000 JRU. In the response received on 11/30/2006, the Applicant provides information showing that 1JRU of IFN-γ = 1.5 IU of IFN-γ. Thus, the claim is drawn to a composition comprising IFN-γ at 3,000,000 – 6,000,000 IU. The Applicants further argue that von Eichborn teaches administration of IFN-γ at 0.1 – 2,000,000 IU, and therefore does not teach a composition having 3,000,000 – 6,000,000 IU (corresponding to 2,000,000 – 4,000,000 JRU). These arguments have been considered and are persuasive.

2. Rejection of claim 9 under 35 USC § 102(e) as being anticipated by Shachar *et al* (US 2003/0053985 A1), as set forth on pages 7-8 of the office action mailed on 5/30/2006, is withdrawn in response to Applicant's amendments to the claim to specifically recite a therapeutic composition comprising IFN-γ at a dose range of 2,000,000 – 4,000,000 JRU. In the response received on 11/30/2006, the Applicant provides information showing that 1JRU of IFN-γ = 1.5 IU of IFN-γ. Thus, the claim is drawn to a composition comprising IFN-γ at 3,000,000 – 6,000,000 IU. The Applicants argue that Shachar *et al* does not teach a composition having 3,000,000 – 6,000,000 IU (corresponding to 2,000,000 – 4,000,000 JRU). These arguments have been considered and are persuasive.

Rejections necessitated by amendment

3. Claims 9 and 12-15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Tara (US 5,171,567). The claims of the instant invention are drawn to a therapeutic composition comprising human IFN-γ and a pharmaceutically acceptable carrier, wherein said IFN-γ is present in an amount effective to treat bullous pemphigoid, and wherein said amount effective to treat bullous pemphigoid is 2,000,000 – 4,000,000 JRU. The claims are further drawn to said composition, wherein said amount to treat bullous pemphigoid is 2,000,000 JRU, and said composition further comprising an antihistaminic, an antiallergic, a corticosteroid, or any combination thereof. The claims also recite a method for treating bullous pemphigoid comprising administering to a human patient IFN-γ in a daily dose of 2,000,000 – 4,000,000 JRU, and specifically 2,000,000 JRU, and also administering IFN-γ in combination with an antihistaminic, an antiallergic, a corticosteroid, or any combination thereof.

Tara teaches a pharmaceutical composition comprised of human IFN-γ in dose ranges of 1,000,000 to 6,0000,000 JRU (column 2, lines 43-50). Although Tara does not specifically say that this is a composition effective for treating bullous pemphigoid, it is noted that the instant claims require the composition to comprise IFN-γ in a dose range of 2,000,000 to 4,000,000 JRU. Therefore, regardless of the intended use of the instant composition, the composition taught by Tara meets the limitation of claims 9 and 12 because it teaches a composition of IFN-γ in the claimed dosage range. Tara also teaches that the IFN-γ composition can be combined with a steroid, thus meeting the limitations of claim 13. Furthermore, it would be expected, in the absence of evidence to the contrary, that the composition of Tara would effectively treat bullous pemphigoid because it comprises IFN-γ at doses encompassed by the instant claims, and can also comprise a steroid. Because the USPTO does not have the facilities for testing the IFN-γ composition of the prior art (Tara), the burden is on the Applicant to show a novel and unobvious difference between the claimed composition and that of the prior art (Tara). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray, 10 USPQ 2d 1922 1923 (PTO Bd. Pat. App. & Int.).

Tara also teaches administration of this IFN-γ compound to patients, including daily administation. Although Tara does not specifically recite treatment of bullous pemphigoid, it is noted that the instant claims do not specifically recite a particular patient population, nor is any degree of treatment specified. Therefore, the method steps of administering the IFN-γ composition taught by Tara would be expected, in the absence of evidence to the contrary, to treat bullous pemphigoid. Although the methods of Tara and that of the instant application are not identical, they are not patentably distinct from each other because the process steps of administering a composition comprising IFN-γ, and alternatively, a steroid, are the same regardless of whether the purpose is to treat a disease such as leukemia (as in Tara), or to treat bullous pemphigoid (Ex parte Novitski, 26 USPQ 1391). Therefore, Tara also meets the limitations of claims 14-15 and 17 of the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shachar *et al* ("Shachar" – US 2003/0053985 A1), as originally applied to claims 2-4 and 11 on pages 9-10 of the office action mailed on 5/30/2006, and further in view of Tara. The subject matter of the claims of the instant invention, as well as the disclosure of Tara, is discussed *supra*. Claim 16 is further drawn to a method of treating bullous pemphigoid comprising intravenous administration of IFN-γ. Shachar teaches administration of IFN-γ in a pharmaceutical composition, and teaches that bullous pemphigoid can be treated by administration of IFN-γ (paragraphs 0053 and 0240, and claims 23 and 87).

In the response received on 11/30/2006, the Applicant argues that a *prima facie* case of obviousness has not been established because Shachar does not teach or suggest administration of IFN-γ in the claimed dose range. Furthermore, the Applicant asserts that there is no teaching or suggestion in Shachar to administer IFN-γ intravenously, or to combine IFN-γ with antihistaminic, an antiallergic, a corticosteroid, or any combination thereof.

These arguments have been fully considered and are not persuasive. Shachar teaches that bullous pemphigoid is treated by low doses of IFN-γ. Although Shachar does not explicitly teach the claimed dosage of IFN-γ, one of ordinary skill in the art would know that if bullous pemphigoid is responsive to low doses of IFN-γ, then higher does would also be effective, especially in cases where the patient does not respond to a low dose. Furthermore, the disclosure of Tara would demonstrate to a person of ordinary skill in the art that higher doses of IFN-γ, such as 1,000,000 – 6,000,000 JRU, can be effectively administered and are tolerated by patients. Thus, the skilled artisan would have both the motivation and ability to optimize the dosage of IFN-γ administered for treatment of bullous pemphigoid. Regarding the route of administration, although neither Shachar nor Tara explicitly teach intravenous administration, they also do not teach away from intravenous administration, and therefore a person of ordinary skill in the art would have no reason to believe IFN-γ could not be administered intravenously in the claimed method. Finally, regarding co-adminstration of an antihistaminic, an antiallergic, a corticosteroid, or combinations thereof, these agents are well-known in the art, as evidenced by the teaching of Tara to co-administer IFN-γ with a steroid. Thus, by following the combined

teachings of Shachar and Tara, one of ordinary skill in the art would know that bullous pemphigoid can be treated by administration of IFN-γ, that patients can tolerate doses of IFN-γ in the claimed dose range, and would also know of co-administration of IFN-γ and a steroid. Therefore, for the reasons set forth above, a skilled artisan would be motivated to administer IFN-γ, with or without a steroid for treatment of bullous pemphigoid, at a dose encompassed by the claimed dose range, and would also be motivated to create a pharmaceutical composition comprising IFN-γ, and a steroid, wherein said IFN-γ is present at 2,000,000 – 4,000,000 JRU.

Conclusion

No claim is allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce D. Hissong, Ph.D., whose telephone number is (571) 272-3324. The examiner can normally be reached M-F from 8:30 am - 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol, Ph.D., can be reached at (571) 272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BDH
Art Unit 1646

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